

ELECTRIC POWER STEERING SYSTEM INCLUDING A SEGMENTED STATOR SWITCHED RELUCTANCE MOTOR

ABSTRACT OF THE DISCLOSURE

An electric power steering system for a vehicle includes a steering wheel, a steering shaft connected to said steering wheel, and a switched reluctance motor coupled to said steering shaft. The switched reluctance motor includes a segmented stator having a plurality of stator segment assemblies that define salient stator poles and inter-pole stator slots. Each of the stator segment assemblies includes a stack of stator plates defining a stator segment core, an end cap assembly, and winding wire that is wound around the stator segment core and the end cap assembly. The rotor tends to rotate relative to the stator to a rotational position that maximizes the inductance of an energized winding. A drive circuit energizes the winding wire around the stator segment assemblies based on the rotational position of the rotor.